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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,225	05/08/2001	Juergen Eisen	EISEN ET AL	3996

7590 02/03/2003

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EXAMINER	
HARRINGTON, ALICIA M	

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,225	EISEN ET AL.	
	Examiner	Art Unit	
	Alicia M Harrington	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-14 and 16-24* is/are rejected.

7)☒ Claim(s) *3 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4
4) ☐ Interview Summary (PTO-413) Paper No(s) _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other

DETAILED ACTION

Information Disclosure Statement

The Examiner has considered the information disclosure statement on filed on 5/8/01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2,4-14,16-24are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlen (US 5,767,975) in view of Tsikos et al (US 5,013,927).

Regarding claim 1, Ahlen disclose a device for detecting the marginal edge (of packages) and markings (crease line) in the longitudinal direction (figures 8-12; col. 7, lines 1-65) of a moving material web comprising at least one optical sensor (46) for scanning the web transversely; at least one first light source (43a or 43b) associated with the optical sensor and directed at an area on the material web so the sensor exclusively detects light reflected by the material web in a diffused manner; and at least a second light source associated with the optical sensor (43a or 43 b) where the first and second light can be alternately employed (col. 7,lines 55-62). However, Ahlen fails to specifically disclose the second light source is a diffused light source. Although, it is well known in the art, as taught by Tsikos.

Tsikos discloses a device for detecting an edge or shadow outline/marking on a web (see col. 6,lines 54-60) where the system uses a first and second light where one

light is a diffuse light source (26,27; see col. 3, lines 3-7 and 30-35) that can be alternately employed. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ahlen, as taught by Tsikos, since diffuse light evenly illuminates a surface.

Regarding claim 2, Again, Ahlen fails to disclose a diffuse light source. Tsikos disclose a diffuse light source with a planar diffuser plate. This is the functional equivalent of a diffuser disk. Thus, would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ahlen, as taught by Tsikos, since diffuse light evenly illuminates a surface.

Regarding claim 4, Ahlen discloses the lights sources are LED which emit elliptical shape beams (cone shapes). Tsikos adds the second light source is diffused light which consist of a fluorescent light. And Tsikos, in col. 6,lines 35-50, adds that different types of light sources may be used as the illumination sources. However, they fail to specifically disclose the diffusing light source consist of a plurality of emitters generating light cones overlapping one another. Although, the Examiner takes official notice that it is notoriously well known in the art to use a plurality of LED units as the light source for a diffusive light source. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ahlen and Tsikos to include a plurality of emitters (such as LED's) for generating elliptical/cone shape beams as an equivalent second light source, since a LED is an inexpensive light source that is readily used in the art.

Regarding claim 5, as discussed above in claim 4, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a light source generates

light cones/elliptical beam shape. It is also obvious that the light cones opening angle is a preferred range since it would partially depend on the angle of the source to the light receptive surface. Thus, Ahlen and Tsikos disclose the claimed invention except for the opening angle of forty- five degrees. And it would have been obvious to one of ordinary skill in the art at the time the invention was made, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering an optimum workable range involves only routine skill in the art. In re aller, 105 USPQ 233.

Regarding claim 6, Ahlen discloses the lights sources are LED which emit elliptical shape beams (cone shapes). And it is obvious that the light cones opening angle is a preferred range since it would partially depend on the angle of the source to the light receptive surface. Thus, Ahlen and Tsikos disclose the claimed invention except for the opening angle for sixty degrees or less. And it would have been obvious to one of ordinary skill in the art at the time the invention was made, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering an optimum workable range involves only routine skill in the art. In re aller, 105 USPQ 233.

Regarding claim 7, Ahlen discloses a light source is light emitting diode (see col. 6, lines 50-55).

Regarding claim 8, Ahlen and Tsikos support incorporating other types of light sources into their devices. However, they fail to specifically disclose the first and second light sources emit multicolored light. Although, the Examiner takes official notice that multicolored light system is used in inspection/web system (red, green, blue etc). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a system with multicolor light sources. It would have been further

obvious to use two light elements with multiple lights emitting functionality to reduce on the number the lighting elements needed to produce the different components of light and thus, reduce cost of manufacturing.

Regarding claim 9, Ahlen and Tsikos support incorporating other types of light sources into their devices. Ahlen also specifically discloses the light source could be laser light (see col. 3). However, they fail to specifically disclose the light sources are modulated. Although, inspection web system are notoriously well known in the art for using modulated light sources to distinguish the ambient light from the system light sources, and the Examiner takes official notice to this fact. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was to include a modulated light output from both light sources to distinguish its light from ambient light and thus properly distinguishing marks or edges on the web.

Regarding claim 10, Ahlen discloses the light source may alternate or emit continuously (col. 7,lines 55-65). Tsikos disclose the light can emit alternately or simultaneously (col. 6,lines 35-50).

Regarding claim 11, Ahlen disclose the light it controlled to produce alternate high frequency images (one from the left and one from the right) to distinguish the mark/crease of the web (see col. 7, lines 55-62).

Regarding claim 12, Ahlen device detects markings. Ahlen and Tsikos fail to specially disclose how information of the detection of a mark or edge is indicated to the user. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to indicate the position to the user of the equipment and further

obvious to implement notification by using a light source (ex: turns on every time a mark is found).

Regarding claim 13,Ahlen disclose a device for detecting the marginal edge (of packages) and markings (crease line) in the longitudinal direction (figures 8-12; col. 7, lines 1-65) of a moving material web comprising at least one optical sensor (46) for scanning the web transversely; at least one first light source (43a or 43b) associated with the optical sensor and directed at an area on the material web so the sensor exclusively detects light reflected by the material web in a diffused manner; and at least a second light source associated with the optical sensor (43a or 43 b) where the first and second light can be alternately or continuously employed (col. 7,lines 55-62). However, Ahlen fails to specifically disclose the second light source is a diffused light source. Although, it is well known in the art, as taught by Tsikos.

Tsikos discloses a device for detecting an edge or shadow outline/marking on a web (see col. 6,lines 54-60) where the system uses a first and second lights where one light is a diffuse light source (26,27; see col. 3, lines 3-7 and 30-35) that can be alternately or simultaneously employed. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ahlen, as taught by Tsikos, since diffuse light evenly illuminates a surface.

Regarding claim 14, again, Ahlen fails to disclose a diffuse light source. Tsikos disclose a diffuse light source with a planar diffuser plate. This is the functional equivalent of a diffuser disk. Thus, would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ahlen, as taught by Tsikos, since diffuse light evenly illuminates a surface.

Regarding claim 16, Ahlen discloses the lights sources are LED which emit elliptical shape beams (cone shapes). Tsikos adds the second light source is diffused light which consist of a fluorescent light. And Tsikos, in col. 6,lines 35-50, adds that different types of light sources may be used as the illumination sources. However, they fail to specifically disclose the diffusing light source consist of a plurality of emitters generating light cones overlapping one another. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ahlen and Tsikos to include a plurality of emitters (such as LED's) for generating elliptical/cone shape beams as equivalent second light source, since a LED is an inexpensive light source that is readily used in the art.

Regarding claim 17, as discussed above in claim 4, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a light source generates light cones/elliptical beam shape. It is also obvious that the light cones opening angle is a preferred range since it would partially depend on the angle of the source to the light receptive surface. Thus, Ahlen and Tsikos disclose the claimed invention except for the opening angle of forty-five degrees. And it would have been obvious to one of ordinary skill in the art at the time the invention was made, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering an optimum workable range involves only routine skill in the art. In re aller, 105 USPQ 233.

Regarding claim 18, Ahlen discloses the lights sources are LED which emit elliptical shape beams (cone shapes). And it is obvious that the light cones opening angle is a preferred range since it would partially depend on the angle of the source to the light receptive surface. Thus, Ahlen and Tsikos disclose the claimed invention except for the

opening angle for sixty degrees or less. And it would have been obvious to one of ordinary skill in the art at the time the invention was made, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering an optimum workable ranges involves only routine skill in the art. In re aller, 105 USPQ 233.

Regarding claim 19, Ahlen discloses a light source is light emitting diode (see col. 6, liens 50-55).

Regarding claim 20, Ahlen and Tsikos support incorporating other types of light sources into their devices. However, they fail to specifically disclose the first and second light sources emit multicolored light. Although, the Examiner takes official notice that multicolored light system is used in inspection/web system (red, green, blue etc). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a system with multicolor light sources. It would have been further obvious to use two light elements with multiple lights emitting functionality to reduce on the number the lighting elements needed to produce the different components of light and thus, reduce cost of manufacturing.

Regarding claim 21, Ahlen and Tsikos support incorporating other types of light sources into their devices. Ahlen also specifically discloses the light source could be laser light (see col. 3). However, they fail to specifically disclose the light sources are modulated. Although, inspection web system are notoriously well known in the art for using modulated light sources to distinguish the ambient light from the system light sources, and the Examiner takes official notice to this fact. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was to include a modulated light

output from both light sources to distinguish its light from ambient light and thus properly distinguishing marks or edges on the web.

Regarding claim 22, Ahlen discloses the light source may alternate or emit continuously (col. 7,lines 55-65). Tsikos disclose the light can emit alternately or simultaneously (col. 6,lines 35-50).

Regarding claim 23, Ahlen disclose the light it controlled to produce alternate high frequency images (one from the left and one from the right) to distinguish the mark/crease of the web (see col. 7, lines 55-62).

Regarding claim 24, Ahlen device detects markings. Ahlen and Tsikos fail to specially disclose how information of the detection of a mark or edge is indicated to the user. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to indicate the position to the user of the equipment and further obvious to implement notification by using a light source (ex: turns on every time a mark is found).

Allowable Subject Matter

Claims 3, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the dependent claims, in such manner that a rejection under 35 U.S.C 102 or 103 would be proper. The prior art fails to teach a combination of all the

claimed features as presented in independent claims, which include the first and second light sources and optical sensor are terminated by a common, transparent cover, said cover having partial area comprising a rough, light scattering surfaces form the diffuser disk as claimed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cohran et al (US 4,972,093) discloses an inspection lighting system;

Dunham (US 6,428,222) discloses a sensor for identifying marks on a ribbon;

Massey (US 4,184,080) discloses a ratiometric edge detector system; and

White (US 5,684,530) discloses a continuous diffuse illumination method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M Harrington whose telephone number is 703 308 9295. The examiner can normally be reached on Monday - Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703 308 4883. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

Alicia M Harrington
Examiner
Art Unit 2873

AMH
January 15, 2003